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AUTHOR Roweton, William E.; Bare, Charles
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ABSTRACT

This paper identified significant precollege predictors of retention in two freshman classes of a rural college. The subjects of the study were the 1987 and 1988 freshman classes (with 256 and 302 students, respectively) of Chadron State College (Nebraska), a rural college of over 3,000 students. Thirty-three student background variables were obtained from the ACT profile sheet; two variables, college GPA and retention, came from paper-and-pencil and electronic institutional records. Retention (enrolled or not enrolled after 1 year for the 1988 freshman class and after 2 years for the 1987 class) was the dependent variable. Discriminant analysis was performed on each class, on gender subgroups, and on three ACT ability levels. Results show that attrition remained predominantly a first-year problem. Females were more likely than males to stay in school after 1 or 2 years. Rates of attrition ballooned dramatically as ability levels declined. Across 12 discriminant analyses, the most often identified variables were high school GPA and an ACT subscore in natural science. Also common were age and hometown population, plus several measures of career choice such as business and social sciences. Significant predictors of retention represented many types of precollege measures, and the results varied as the dataset was redefined. One-year predictions were higher than 2-year predictions, and the correlates in this study were less successful in predicting female than male retention. (KS)

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Predicting Rural College Retention

William E. Roweton

Department of Psychology

Charles Bare

Department of Mathematics

Chadron State College

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Abstract

This paper identified significant precollege predictors of retention in two freshman classes. Which correlates surfaced statistically in our discriminant analysis varied by how the datasets were defined. Interest in business contact and social science careers and ACT scores in natural science and English predicted retention after two years for the 1987 class. In contrast, only high school GPA and student age were significant predictors after one year for the 1988 class. Different patterns of precollege variables predicted retention in males and females, after one or two years. A discriminant analysis across three ACT ability levels yielded an even more complex array of results. These findings did not reduce to a simple explanation or to a single theoretical model.

Predicting Rural College Retention

> . . . student departure may serve as a barometer . . . [for] the social and intellectual health of college life . . . .
>
> --Vincent Tinto (1987b, p. 1)

The purpose of this institutional research study was to identify statistically significant precollege predictors of rural college retention.

Reducing student attrition has been essential to higher education's integrity and prosperity. Enrollment and economics, two major mediating variables amidst today's uncertainties, have intermingled causally.

The retention puzzle was widely acknowledged, and institutions with unacceptably high levels of attrition welcomed data-based intervention programs (Demery, 1989; Louis, 1984; Terenzini, 1987). Schemes for reducing attrition were commonplace in community colleges (e.g, Dennis-Rounds, 1983; JTCC's holding power, 1989), four-year institutions (e.g., Martin,

1982; Ramaker, 1987) and universities (e.g., Patterson, Barnes, & Boettcher, 1984). Nonetheless, controlling and predicting student attrition remained puzzling. Incidentally, graduation rates remained about 50% for American colleges since 1890 (Tinto, 1982). Changing a century of middling success challenged our managerial resourcefulness (Terenzini, 1987).

Retention models like Vincent Tinto's (Fox, 1986; Thomas & Bean, 1988; Tinto, 1975, 1982, 1987a, 1987c; Tinto & Wallace, 1986) guided us conceptually. According to Tinto, effective longitudinal prediction depended upon disentangling the interplay of background variables and college experiences.

> . . . one must include not only background characteristics of individuals . . . but also expectational and motivational attributes . . . [and] educational expectations and their institutional manifestations . . . . (Tinto, 1975, p. 93)

Tinto promised control and understanding <u>if</u> we collected enough of the right predictors <u>and</u> applied multiple regression analysis. Tinto (1975, p. 120)

"disaggregated" (1) background variables; (2) initial student institutional commitment; (3) academic and social integration; and (4) educational goal commitments (e.g., Mencke, et al., 1988). However promising, Tinto's strategy did not conveniently accommodate all higher education personnel.

College recruiters, scurrying from one high school to the next and clutching a fistful of standardized test results, invested their scarce resources sparingly. A student's response to college life, although integral for Tinto's model, always followed recruitment. Predicting college retention from precollege high school data resided, conceptually at least, within Tinto's model.

The present study evaluated the power of precollege variables to predict second-year and third-year college retention in two freshman classes. Further analyses was conducted for males and females and for three ACT composite-score ability levels within each class.

Method

Subjects

The samples for this study consisted of two freshman classes. Both cohorts entered Chadron State College, quite traditionally, with no college-credit in the fall semesters. Nationally, about 77% of the first-time college entrants began college in the fall (Tinto, 1987, p. 9).

The freshman class entering in the fall of 1987 (n = 256) consisted of 117 (45.7%) males and 139 (54.3%) females. The 1988 freshman class (n = 302) included 152 (50.3%) males and 150 (47.7%) females.

These students reflected our locale. Chadron State, a four-year regional state institution of over 3,000 students, was located in the rural and sparsely populated panhandle of northwest Nebraska. The College has targeted students and professionals in small ranching communities located throughout western Nebraska, southwestern South Dakota, and eastern Wyoming.

Procedures

Thirty-three (33) student background variables

were obtained from the ACT profile sheet; two variables, college GPA and retention, came from paper-and-pencil and electronic institutional records.

Insert Table 1 about here

For the discriminant analysis, 15 precollege measures from Table 1 served as predictor (or independent) variables. See Table 2.

Insert Table 2 about here

According to Kleinbaum, Kupper, and Muller (1988), not all variables are acceptable.

> As a word of caution, discriminant analysis should be used only when the X-variables under consideration are continuous, with distributions that are not highly skewed. (Kleinbaum, et al., 1988, p. 562)

Variables not meeting Kleinbaum's et al., criteria were eliminated.

Retention--enrolled/not enrolled after one year

for the 1988 freshman class and after two years for the 1987 class--was the criterion (or categorical or dependent) variable.

Discriminant analysis was performed on each class, on gender subgroups, and on three ACT ability levels. To operationally define ability, ACT composite scores were divided into an upper quartile (25%), the middle two quartiles (50%), and the lowest quartile (25%).

This study's statistical strategy was patterned after Barnes, Creswell, and Patterson's (1986) correlational analyses of scholarly recognition. Data was analyzed with version 4 of The Statistical Package for Social Science (SPSS, 1990). The frequencies program yielded means and standard deviations, and the t-test program was selectively applied. The discriminant analysis program determined how well the cluster of independent variables predicted membership in one of two retention categories, "stay" or "drop." The Wilks' Lambda stepwise method was employed because it " . . . takes into consideration both the difference between groups and cohesiveness or homogeneity within groups" (Klecka, 1980, p. 54).

Results

Student characteristics

The modal age of the 1987 freshman class (n = 256) at college entry was 19 years but ranged from 18 to 24. Furthermore, 86% of the class was Caucasian while Native Americans, historically indigenous to Chadron State's region, comprised only 2% of the 1987 sample. Furthermore, 90% of the students were from communities of 19,863 people or fewer, and 77% of the class were from homes within 300 miles of the Chadron campus. In fact, 11% of the 1987 freshman were from the City of Chadron, a northwest Nebraska town of 6,000 where the College has been located since its founding in 1911. The ACT composite scores ranged from 5 to 31. Forty (40%) percent selected Chadron State as their first choice.

The student profile for the 1988 freshman class (n = 302) was similar. The student modal age at college entry for this class was 19 years but ranged from 18 to 28. By race, 92% were Caucasian, and 2%, again, were Native Americans. Like its 1987 cohort, the 1988 entering freshman were from small towns in

this rural region: 90% of the students were from communities with 19,458 or fewer people, and home for 80% of the class was within 300 miles of the campus. Almost 9% were from the City of Chadron. ACT composite scores ranged from 6 to 31. Thirty-seven (37%) percent considered Chadron State College their first choice.

Retention

Table 3 summarized the retention percentages by class, gender, and ability level.

Insert Table 3 about here

Several differences were notable. First, attrition remained predominantly a first-year problem. By the second fall, over 35% of the 1988 freshmen class had departed. Second, females were more likely than males to stay in school after one or two years. Third, rates of attrition ballooned dramatically as ability levels decline. The retention rates of our most able students (as determined by ACT composite scores) was comparatively quite high; few departed Chadron State College after the first year.

Comparisons

Descriptive results for several predictors were reported in Table 4. Significant t-values identified predictors on which dropouts and persisters differed statistically.

Insert Table 4 about here

For the 1987 class, students who stayed at Chadron State after two years had significantly higher ACT composite scores, college GPA's, and standardized scores in math and English than their classmates who had departed.

Comparisons for the 1988 class mirrored the 1987 results. Again, students who stayed had higher ACT scores and college GPA's. Students who remained, however, were younger.

Discriminant analysis

Discriminant analysis was used with continuous, precollege variables. See Table 2. An analysis was performed on each class, on each gender within each class, and on each of three ability levels within each

class.

Insert Tables 5-10 about here

1987 class.--Four precollege correlates (see Table 5) were significant predictors of retention after two years. The analysis identified interest in business contact careers, standardized scores in natural science and English, and percentile interest in social science careers.

1988 class.--The analysis of precollege correlates identified high school GPA and student age as significant predictors for retention after one year. See Table 6.

Gender.--The analysis of gender data after one or two years yielded various patterns of significant predictors.

For 1987 freshman females (see Table 7), the analysis indicated that age, the population of the student's home town, and the ACT composite score were the best predictors statistically.

Predicting retention in males after two years

yielded different results. Only one variable, the population of the hometown, reappeared. Discriminant analysis identified seven additional variables (see Table 8)--four interest measures, two standardized ACT subscores, and high school GPA.

Different prediction patterns were evident with the one-year data. Three academic measures--GPA and subscores in mathematics and natural science--were fine predictors for females (Table 9) but not for males (Table 10). The retention analyses for males highlighted both "social" variables, age and career choice, as well a traditional academic measure, high school GPA.

Ability.--Analysis of each ability level within each freshman cohort yielded a complex pattern of significant predictors. Results from the six discriminant analyses were not simply summarized.

Insert Tables 11-16 about here

However, the analyses identified more statistically significant variables with two-year predictions than

with one-year predictions. Both academic and social variables were significant predictors at each ability level. Even for the top students, academic measures did not predominate.

Most common predictors

Across the 12 analyses, each of the 15 precollege correlates were identified statistically at least once. However, some occurred quite frequently (see Table 17). The most often identified variables were high school

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Insert Table 17 about here

GPA and an ACT subscore in natural science, two academic measures. Also common were age and hometown population, two social variables, plus several measures of career choice. Significant predictors represented many types of precollege measures, and the results varied as the dataset was redefined.

Classification rates

Predicting whether a particular student will stay or depart was moderately successful. Table 18 revealed several trends. First, one-year predictions were

higher than two-year predictions. Second, the 15

Insert Table 18 about here

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continuous correlates in this study were less successful in predicting female than male retention. Third, the classification success of students by ability level was different for each projection period. The range of success after two years was clearly not reflected in the one-year assessment.

Discussion

Prediction of college retention, given our 15 continuous precollege variables, is not perfect. The results highlight obvious variability. Significant numbers of students in even the most at-risk categories remain and succeed in college. Again, attrition is a complex puzzle.

Attrition may be a common conundrum for American colleges and universities, but its solution, one school at a time, may be surprisingly provincial. " . . . each institution," Vincent Tinto (1987c) reminded an audience of personnel professionals, "must assess for

itself the particular attributes of student departure from its campus (p. 8) . . . . causes of departure [are] . . . as varied as the institutional settings from which it arises" (p. 4).

It is difficult to contrast our results with comparable statistical analyses from other rural colleges. A search for recent literature yields only five obviously relevant citations (Brophy, 1984; Gash, et al., 1982; Koefoed, 1984; McGregor, 1986; Weiss, et al., 1987). Although numerous retention studies employ discriminant analysis, their datasets vary substantially from the present study to include, for example, black freshman from a southern school (Pratt, 1982), an urban university (Tracey & Sedlacek, 1986), non-freshman (Ray, et al., 1986), engineering undergraduates (Hayden & Holloway, 1985), a two-year urban college (Eagle, 1982), or extensive prediction periods (Prather & Hand, 1986). These are not acceptable comparisons for Chadron State College's matriculating freshmen. Caution is justified.

This study has identified likely predictors of retention and not causes. Evaluating this study, Tinto

(personal communication, 1991) wrote:

> Discriminant analysis is a perfectly fine technique for . . . persistence data. As long as one understands its methodological constraints, you should not feel uncomfortable . . . Remember, however, significant statistical findings are associational, not casual [sic].

Moving from correlations to causes is tempting, and there have been efforts at confirming Tinto's conceptual model (Tinto, 1975) with latent variable path analysis (e.g., Mencke, et al., 1988; Munro, 1981; Pascarella & Chapman, 1983; Terenzini, et al., 1985) although results do not always match Tinto's expectations.

Terenzini, et al. (1983, p. 21) failed to find " . . . a significant and direct path between students' level of academic integration and subsequent persistence . . . . one of two fundamental causal paths in Tinto's theory." Tinto's second fundamental path, incidentally, is social integration. Furthermore, Terenzini, et al. (1983, p. 14) claimed that background variables did <u>not</u> differentiate persisters from

dropouts. This, of course, was not the result of the present study. Some commonplace precollege variables were successful predictors.

Confusion and complexity, not clarity and simplicity, typifies the statistical hodgepodge now constituting retention literature. A preference for path analysis is premature.

Smith and Glass (1987) define the qualities of good path models.

> Path models are currently enjoying the enthusiastic attention of causal-comparative researchers. They do, however, depend on the accurate measurement of variables in the model as well as the assumption that all plausible "causes" are included in the model. (p. 190) . . . some stringent conditions must be met. (p. 188)

Predicting retention in a rural college may require more or different variables than the ones Tinto (1975) conceptualized two decades ago. "You must select independent variables," my software documentation warns, "that you think are potentially good predictors of the outcome" (Norusis, 1988, p.

187). Simply, the institutional researcher must assemble all of the "good" continuous variables before the discriminant analysis. Are they known? We are neither confident in our list or in the literature.

It should be recalled that Tinto's inspiration is Emile Durkheim's (1897) discussion of egotistical suicide in the turn-of-the-century classic, Le suicide. Tinto's model has been valuable, but additional data may now indicate that the attrition puzzle is more involved than earlier expected.

Our results suggest that predictive power of specific precollege variables relate, in part, to the length of prediction period and the student's gender and ability level. Tinto's (1987c) advice to fit solutions to institutions may be more sagacious than the model (Tinto, 1975) itself.

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Table 1

All precollege variables

Variable	Scale
ACT composite score	Continuous
Age of student (1990 minus birth year)	Continuous
CSC as choice of college	Categorical
CSC distance from hometown	Continuous
Estimated freshman GPA (lower limit)	Continuous
Estimated freshman GPA (upper limit)	Continuous
Ethnic/racial class	Categorical
Gender	Categorical
High school GPA (range)	Continuous
High school GPA (mean)	Continuous
High school quartile	Discrete
Highest degree aspiration	Categorical
Interest in business contact careers	Continuous
Interest in business detail careers	Continuous
Interest in creative arts careers	Continuous
Interest in science careers	Continuous
Interest in social science careers	Continuous

Table 1, cont.

Variable	Scale
Interest in technical trade careers	Continuous
Population of hometown	Continuous
Standardized score in English	Continuous
Standardized score in math	Continuous
Standardized score in natural science	Continuous
Standardized score in social science	Continuous
Want help with educational/ occupational planning	Categorical
Want help with math skills	Categorical
Want help with personal concerns	Categorical
Want help with reading skills	Categorical
Want help with study skills	Categorical
Want help with writing skills	Categorical
Years of high school English	Discrete
Years of high school math	Discrete
Years of high school natural science	Discrete
Years of high school social science	Discrete

Table 2

Continuous precollege variables utilized in the discriminant analysis

Variable
ACT composite score
Age of student (1990 minus birth year)
CSC distance from hometown
High school GPA (mean)
Interest in business contact careers
Interest in business detail careers
Interest in creative arts careers
Interest in science careers
Interest in social science careers
Interest in technical trade careers
Population of hometown
Standardized score in English
Standardized score in math
Standardized score in natural science
Standardized score in social science

Table 3

Retention rates (N)

	Freshman classes	
Category	1987[a]	1988[b]
Females	61.2% (139)	70.0 (150)
Males	55.6 (117)	59.9 (152)
Top ability	75.4 (61)	75.9 (79)
Middle ability	59.8 (127)	66.2 (154)
Lowest ability	41.2 (68)	49.3 (69)
Class	58.6% (256)	64.9 (302)

[a] After two years.

[b] After one year.

Table 4

Means and standard deviations of dropouts and persisters by class

		Dropouts		Persisters		
Year	Predictor	N	Mean	N	Mean	t
1987	ACT	106	16.1	150	19.2	4.39***
	College GPA	41	2.4	135	2.8	2.64*
	ACT math	106	13.6	150	17.1	3.83***
	ACT English	106	16.3	150	18.5	3.20*
	Age	106	21.6	150	21.5	-.39
1988	ACT	106	16.7	196	19.5	4.35***
	College GPA	93	1.8	190	2.8	9.04***
	ACT math	106	14.2	196	17.2	3.44***
	ACT English	106	16.0	196	18.6	4.68***
	Age	106	20.6	196	20.4	-1.91*

*p .05 ***p .001

**p .01

Table 5

Discriminating precollege correlates for 1987 freshman

Step	Correlate[a]	Wilks' Lambda	F-to-remove[a]	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Interest in business contact careers	.97524[*]	5.08	.65	.87	.03
2	Standardized score in natural science	.96694[*]	3.71	-.48	-.93	-.17
3	Interest in social science careers	.95720[*]	2.15	-.02	-.58	-.02
4	Standardized score in English	.94408[*]	2.14	-.03	.70	.15

[a]Minimum F-to-enter/maximum F-to-remove = 1.0000
[*]p <.08

Table 6

Discriminating precollege correlates for 1988 freshman

Step	Correlate[a]	Wilks' Lambda	E-to-remove[a]	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	High school GPA	.88002[*]	32.12	.95	.92	1.51
2	Age	.86935[*]	3.18	-.39	-.31	-.39

[a]Minimum E-to-enter/maximum E-to-remove = 1.0000
[*]p <.0001

Table 7

Discriminating precollege correlates for 1987 freshman females

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Age	.95438*	1.41	.67	.53	.79
2	Population of hometown	.96108*	2.00	.64	.62	.00
3	ACT composite score	.95111*	1.12	-.52	-.47	-.09

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*p <.16

Table 8

Discriminating precollege correlates for 1987 freshman males

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Interest in business detail careers	.90973*	8.27	-.51	-.77	-.03
2	Interest in technical trade careers	.87204*	5.31	-.44	-.67	-.03
3	Interest in science careers	.85116*	1.18	.19	.30	.01
4	Interest in social science careers	.82860*	4.51	-.09	.72	.02
5	High school GPA	.80892*	4.81	.16	.82	1.22
6	Standardized score in social science	.75607*	5.63	-.10	-.95	-.14
7	Population of hometown	.73933*	1.92	.10	.35	.00
8	Standardized score in natural science	.72733*	1.04	.13	.46	.08

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*$p < .02$

Table 9

Discriminating precollege correlates for 1988 freshman females

Step	Correlate[a]	Wilks' Lambda	F-to-remove[a]	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	High school GPA	.90541[b]	5.50	.90	.78	1.27
2	Standardized score in natural science	.89371[b]	2.67	.79	.61	.11
3	Standardized score in math	.88655[b]	1.03	.48	-.38	-.05

[a]Minimum F-to-enter/maximum F-to-remove = 1.0000
[b]p <.002

Table 10

Discriminating precollege correlates for 1988 freshman males

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	High school GPA	.87714*	13.79	.81	.86	1.47
2	Age	.84224*	5.52	-.45	-.49	-.61
3	Interest in social science careers	.82504*	2.65	-.23	-.34	-.01

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*p <.0001

Table 11

Discriminating precollege correlates for 1987 freshman with top ability

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Population of hometown	.88885*	6.60	.45	.71	.00
2	ACT composite score	.82883*	6.39	.22	.99	.64
3	Interest in business detail careers	.77972*	7.41	-.22	-1.00	-.03
4	Standardized score in natural science	.70461*	3.01	-.13	-.71	-.29
5	Interest in technical trade careers	.66146*	1.63	.19	.39	.01
6	Distance from hometown	.64281*	1.55	.20	.36	.00
7	Interest in business contact careers	.61904*	1.34	.00	.43	.01

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*p <.03

Table 12

Discriminating precollege correlates for 1987 freshman with middle ability

Step	Correlate[a]	Wilks' Lambda	*F*-to-remove[a]	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Interest in social science careers	.97693[*]	4.72	.43	.80	.03
2	Interest in business contact careers	.94240[*]	3.71	-.34	-.68	-.02
3	Standardized score in natural science	.92832[*]	3.50	.30	.72	.20
4	Standardized score in English	.91100[*]	2.90	-.07	-.65	-.21
5	Population of hometown	.89656[*]	1.70	.22	.51	.00
6	High school GPA	.88536[*]	1.02	.15	.35	.59

[a]Minimum *F*-to-enter/maximum *F*-to-remove = 1.0000
[*]$p < .016$

Table 13

Discriminating precollege correlates for 1987 freshman with lower ability

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Interest in business contact careers	.70971*	2.70	.47	.49	.02
2	Interest in science careers	.63464*	5.50	-.23	-.66	-.02
3	Interest in social science careers	.56043*	5.75	-.05	-	-
4	Interest in business detail careers	.47313*	4.10	.46	.63	.03
5	Standardized score social science	.43782*	6.62	.20	.77	.24
6	Standardized score in math	.37448*	5.91	-.19	-.74	-.18
7	Percentile interest in social science careers (removed)	.38374*	-	-	-	-
8	Population of hometown	.35277*	1.67	-.09	-.40	.00

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*$p < .005$

Table 14

Discriminating precollege correlates for 1988 freshman with top ability

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	Standardized score in English	.92898*	5.70	.72	.83	.29
2	Interest in business detail careers	.90662*	1.25	-.40	-.40	-.01
3	Population of hometown	.88767*	1.56	.22	.45	.00
4	Age	.87139*	1.14	.36	.39	.62

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*$p < .08$

Table 15

Discriminating precollege correlates for 1988 freshman with middle ability

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	High school GPA	.84370*	12.20	.77	.66	1.20
2	Age	.80672*	6.87	-.31	-.47	-.65
3	Interest in business detail careers	.79090*	3.70	.31	.35	.01
4	Standardized score in English	.76956*	3.22	.53	.35	.14
5	Standardized score in natural science	.76279*	1.15	.26	.20	.05

[a]Minimum F-to-enter/maximum F-to-remove = 1.0000
*p <.0001

Table 16

Discriminating precollege correlates for 1988 freshman with lower ability

Step	Correlate*	Wilks' Lambda	F-to-remove*	Pooled within group correlations	Standardized coefficients	Unstandaradized coefficients
1	High school GPA	.84684*	10.33	.65	.84	1.71
2	Interest in business detail careers	.764553*	3.89	-.28	-.54	-.02
3	Standardized score in math	.74952*	2.24	.26	.40	.11
4	Interest in science careers	.73415*	2.67	.08	.49	.02
5	Interest in technical trade careers	.71403*	1.21	-.18	-.33	-.01
6	Age	.69921*	1.06	-.36	-.28	-.28

*Minimum F-to-enter/maximum F-to-remove = 1.0000
*p <.05

Table 17

Most common predictors

Predictor	N
High school GPA (mean)	7
Standardized score in natural science	7
Age	6
Population of hometown	6
Interest in business contact careers	5
Interest in business detail careers	5
Interest in social science careers	5

Table 18

Classification rates

Year	Datasets	Rates
1987	Class	58.9%
	Females	57.3
	Males	63.6
	Top ability	80.0
	Middle ability	60.0
	Lower ability	47.6
1988	Class	71.0
	Females	66.4
	Males	73.5
	Top ability	62.0
	Middle ability	65.5
	Lower ability	68.7